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Ali Makoui

Ali Makoui

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Steve Teig, et al.

Serial No.: 10/066,095

Filing Date: 1/31/2002

For: METHOD AND APPARATUS FOR
ROUTING GROUPS OF PATHS

Examiner: Brandon Bowers

Group Art Unit: 2825

**TRANSMITTAL LETTER FOR NOTICE OF APPEAL AND
PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Examiner:

In complete response to the Office Action dated 07/28/2005, attached please find:

1. A Notice of Appeal
2. Pre-Appeal Brief Request for Review
3. Remarks for Pre-Appeal Brief Request for Review; and
4. A Credit Card Payment Form is attached.

The fee has been calculated as follows:

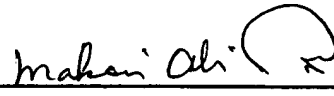
| FOR | NUMBER | NUMBER OVER ALLOTMENT | RATE | CALCULATIONS |
|---|--------|-----------------------|------------|-------------------------|
| ADDED CLAIMS | 0 | * | x \$50.00 | \$0 |
| ADDED INDEPENDENT CLAIMS | 0 | * | X \$200.00 | \$0 |
| MULTIPLE DEPENDENT CLAIM(S) (if applicable) | | | + \$360.00 | \$0 |
| _ MONTHS PETITION FOR EXTENSION FOR REPLY : | | | | \$000.00 |
| NOTICE OF APPEAL FEE | | | | \$500.00 |
| Reduction by 1/2 for filing by small entity (Note 37 C.F.R. §§ 1.9, 1.27, 1.28). The Applicant hereby states that it qualifies as a small entity under 37 CFR 1.27 | | | | \$0.00 |
| | | | | TOTAL = \$500.00 |

The Assistant Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this transmittal and associated documents, or to credit any overpayment to **Deposit Account No. 50-1128**.

Respectfully submitted,

Dated: 10/28/2005

By: _____



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REMARKS FOR PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated 07/28/2005, please consider the followings remarks, which begin on page 2 of this paper.

In the Office Action, the Examiner rejected claims 1 and 4-22 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,615,011 to Linsker ("Linsker") in view of, U.S. Patent No. 5,838,583 to Varadarajan et al ("Varadarajan").

I. Rejection of Claims 1 and 4-22 under §103(a)

Claims 4-22 are dependent directly or indirectly on claim 1. Claim 1 recites a method of routing a net by identifying a set of paths between a set of source routable elements of a net and a set of target routable elements of the net. The set of paths has to have a minimum acceptable number of paths. The method further identifies a set of an acceptable number of paths between the set of source routable elements and the set of target routable elements. The method identifies the set of paths by performing the following operations: It specifies a first total cost and performs a first depth-first search to identify the set of at least two paths that each has a cost that does not exceed the first total cost. Each path in the set includes a set of expansions from the set of routable-element sources to the set of routable-element targets. If the search cannot find the acceptable number of paths, the method increments the total cost and performs a second depth-first search to identify the set of paths that each has a cost that does not exceed the incremented total cost, where the acceptable number of paths is at least two paths. When the acceptable number of paths is identified, the method uses one of the paths to define a route for the net.

Applicants respectfully submit that neither Linsker nor Varadarajan alone or in combination does disclose, teach, or even suggest such a method. As further described in below, the Examiner's rejection has relied on impermissible piecemeal and hindsight combination of features from different references. This hindsight, piecemeal reconstruction is

specifically problematic as the Examiner has not identified any suggestions or motivations in the art for establishing this combination.

Specifically, in the Office Action, the Examiner has agreed that Lisker does not teach identifying an acceptable number of paths, wherein the searches are depth first and wherein each path in the set includes a set of expansions from the set of routable-element sources to the set of routable-element targets. *See*, Office Action dated 7/28/2005, page 2.

Applicants respectfully submit that Varadarajan is not from the same field of endeavor and does not disclose, teach, or even suggest a method of routing a net that has source routable elements and target routable elements. Instead, Varadarajan assigns signal paths to particular signals and does not specify path expansions. Specifically, Varadarajan selects individual data path functions in a datapath region rather than routing a net. *See*, Varadarajan col. 18, lines 30-36. Varadarajan defines datapath functions as: “Data-paths areas of the circuit perform functional operations, such as mathematical or other operations. More particularly, datapaths are typically composed of large numbers of highly regular and structured datapath functions, each datapath function typically including an arrangement of logic cells.” *See*, Varadarajan, column 1, lines 20-25.

Varadarajan’s function preprocessor creates a range of bit offset, connectivity weight pairs rather than identifying a set of path expansions between a set of source routable elements and a set of target routable elements of a net. *See* col 19, lines 35-38. This is in contrast to Claim 1 that clearly specifies the identification of a set of path expansions between routable elements of a net. In fact, Varadarajan teaches away from having a method of routing a set of routable elements by specifying: “The operations of the conventional chip

floorplaner 150, global/detail router 160 ... are conventional.” (Emphasis added) *See*, Varadarajan column 6, lines 12-14.

Applicants respectfully submit that it is improper to use the inventor’s disclosure as a road map for selecting and combining prior art disclosures. Grain Processing Corp. v. American Maize-Products Corp., 840 F.2d 902, 907 (Fed. Cir. 1988). Absent such a showing in the prior art, the Examiner has impermissibly used “hindsight” by using the Appellants’ teaching as a blueprint to hunt through the prior art for the claimed elements and combine them as claimed. In re Zuko, 111 F.3d 887, 42 USPQ2d 1476 (Fed. Cir. 1997).

In view of the foregoing remarks, Applicants respectfully submit that the cited references do not anticipate or otherwise render claim 1 unpatentable. Given that claims 4-22 are directly or indirectly dependent on claim 1, Applicants respectfully submit that claims 1 and 2-22 are patentable over Linsker and Varadarajan for at least the reasons that were discussed above in relation to claim 1. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the §103(a) rejection of claims 1, and 4-22.

CONCLUSION

In view of the foregoing, it is submitted that all pending claims, namely claims 1 and 4-22, are in condition for allowance. Reconsideration of the rejections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

STATTLER, JOHANSEN & ADELI LLP

Dated: 10/28/05

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